

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

- 1     1.     (Previously Presented) A wireless audio transmission and reception  
2           system comprising:  
  
3                 a pulse width amplifier to receive an audio signal and a reference  
4                         control ramp signal to compare said a voltage level of said audio  
5                         signal with said reference control ramp signal to generate a  
6                         digital output signal such that a pulse width of said digital output  
7                         signal is modulated by said audio signal, such that the pulse  
8                         width is proportional to an amplitude of said voltage level of said  
9                         audio signal to provide a pulse width modulated signal;  
  
10                an up-converter in communication with the pulse width amplifier to  
11                         receive the pulse width modulated signal and convert said pulse  
12                         width modulated signal to a modulated carrier signal;  
  
13                a transmitter in communication with the modulated carrier signal to  
14                         transfer the modulated carrier signal wirelessly;  
  
15                a receiver to receive the modulated carrier signal;

16 a down-converter in communication with the receiver to receive the  
17 modulated carrier signal and combine said modulated carrier  
18 signal with a receiver local oscillator frequency signal to extract  
19 the pulse width modulated signal from the modulated carrier  
20 signal; and

21 an integrator in communication with the down-converter to receive the  
22 extracted pulse width modulated signal to remove a timing  
23 signal from said extracted pulse width modulated signal to  
24 restore the audio signal.

1 2. (Previously Presented) The system of claim 1 further comprising power  
2 amplifier in communication with the integrator to receive the audio signal  
3 and amplify said audio signal and transfer said amplified audio signal to a  
4 transducer.

1 3. (Previously Presented) The system of claim 1 wherein the pulse width  
2 amplifier comprises

3 a comparator having a first input to receive the audio signal and a  
4 second input to receive the reference control ramp signal, said  
5 reference control ramp signal having a triangular form such that,  
6 as said comparator compares the audio signal and the  
7 reference control ramp signal, the pulse width modulated signal  
8 is provided to an output of said comparator.

1     4.     (Original) The system of claim 1 wherein the up-converter comprises a  
2           modulation apparatus to combine a carrier frequency with the pulse width  
3           modulated signal to form the modulated carrier signal.

1     5.     (Original) The system of claim 4 wherein the modulation apparatus is  
2           selected from a group of modulation apparatus consisting of frequency  
3           shift keying modulation apparatus, amplitude shift keying modulation  
4           apparatus, phase shift keying modulation apparatus, quadrature phase  
5           shift keying modulation apparatus, time domain multiple access  
6           modulation apparatus, and code domain multiple access modulation  
7           apparatus.

1     6.     (Original) The system of claim 1 wherein the down-converter comprises a  
2           demodulation apparatus to extract the pulse width modulated signal from  
3           the modulated carrier signal.

1     7.     (Original) The system of claim 6 wherein the demodulation apparatus is  
2           selected from a group of demodulation apparatus consisting of frequency  
3           shift demodulation apparatus, amplitude shift keying demodulation  
4           apparatus, phase shift keying demodulation apparatus, quadrature phase  
5           shift keying demodulation apparatus, time domain multiple access  
6           demodulation apparatus, and code domain multiple access demodulation  
7           apparatus.

- 1 8. (Previously Presented) The system of claim 1 wherein the integrator is a  
2 low pass filter having a cut off frequency suitable to pass the audio signal  
3 and remove the timing signal.
- 1 9. (Original) The system of claim 1 wherein the carrier frequency is at least  
2 900 MHz.
- 1 10. (Previously Presented) A wireless audio transmitter system comprising:  
2 a pulse width amplifier to receive an audio signal and a reference  
3 control ramp signal to compare said a voltage level of said audio  
4 signal with said reference control ramp signal to generate a  
5 digital output signal such that a pulse width of said digital output  
6 signal is modulated by said audio signal, such that the pulse  
7 width is proportional to an amplitude of said voltage level of said  
8 audio signal to provide a pulse width modulated signal;  
9 an up-converter in communication with the pulse width amplifier to  
10 receive the pulse width modulated signal and convert said pulse  
11 width modulated signal to a modulated carrier signal; and  
12 a transmitter in communication with the modulated carrier signal to  
13 transfer the modulated carrier signal wirelessly.
- 1 11. (Previously Presented) The transmitter system of claim 10 wherein the  
2 pulse width amplifier comprises

3           a comparator having a first input to receive the audio signal and a  
4                   second input to receive said reference control ramp signal, said  
5                   reference control ramp signal having a triangular form such that,  
6                   as said comparator compares the audio signal and the  
7                   reference control ramp signal, the pulse width modulated signal  
8                   is provided to an output of said comparator.

1   12.   (Original) The transmitter system of claim 10 wherein the up-converter  
2           comprises a modulation apparatus to combine a carrier frequency with the  
3           pulse width modulated signal to form the modulated carrier signal.

1   13.   (Original) The transmitter system of claim 12 wherein the modulation  
2           apparatus is selected from a group of modulation apparatus consisting of  
3           frequency shift keying modulation apparatus, amplitude shift keying  
4           modulation apparatus, phase shift keying modulation apparatus,  
5           quadrature phase shift keying modulation apparatus, time domain multiple  
6           access modulation apparatus, and code domain multiple access  
7           modulation apparatus.

1   14.   (Original) The transmitter system of claim 10 wherein the carrier frequency  
2           is at least 900 MHz.

1   15.   (Previously Presented) A wireless audio receiver system comprising:  
2           a receiver to receive a modulated carrier signal;

3           a down-converter in communication with the receiver to receive the  
4           modulated carrier signal and combine said modulated carrier  
5           signal with a receiver local oscillator frequency signal to extract  
6           a pulse width modulated signal from the modulated carrier  
7           signal; and

8           an integrator in communication with the down-converter to receive the  
9           extracted pulse width modulated signal to remove a timing  
10          signal from said extracted pulse width modulated signal to  
11          restore an audio signal.

1   16.   (Original) The receiver system of claim 15 wherein the down-converter  
2          comprises a demodulation apparatus to extract the pulse width modulated  
3          signal from the modulated carrier signal.

1   17.   (Original) The receiver system of claim 16 wherein the demodulation  
2          apparatus is selected from a group of demodulation apparatus consisting  
3          of frequency shift demodulation apparatus, amplitude shift keying  
4          demodulation apparatus, phase shift keying demodulation apparatus,  
5          quadrature phase shift keying demodulation apparatus, time domain  
6          multiple access demodulation apparatus, and code domain multiple  
7          access demodulation apparatus.

1 18. (Previously Presented) The receiver system of claim 15 wherein the  
2 integrator is a low pass filter having a cut off frequency suitable to pass  
3 the audio signal and remove the timing signal.

1 19. (Previously Presented) The receiver system of claim 15 wherein the  
2 carrier frequency is at least 900 MHz.

1 20. (Previously Presented) A method for wireless transmission of an audio  
2 signal comprising the steps of:

3 acquiring the audio signal;

4 comparing said audio signal with a reference control ramp signal;

5 from said comparing, generating a digital output signal such that a

6 pulse width of said digital output signal is modulated by said

7 audio signal, such that the pulse width is proportional to an

8 amplitude of said voltage level of said audio signal to provide a

9 pulse width modulated signal;

10 up-converting the pulse width modulated signal to a modulated carrier

11 signal;

12 transmitting said modulated carrier signal;

13 receiving said modulated carrier signal;

14 down-converting said modulated carrier signal to restore the pulse  
15 width modulated signal by the step of combining said modulated  
16 carrier signal with a receiver local oscillator frequency signal to  
17 extract the pulse width modulated signal from the modulated  
18 carrier signal; and

19 integrating the restored pulse width modulated signal to remove a  
20 timing signal from said restored pulse width modulated signal to  
21 extract said audio signal.

1 21. (Previously Presented) The method of claim 20 further comprising the  
2 steps of:

3 amplifying the restored audio signal

4 transferring the amplified audio signal to a transducer.

1 22. (Previously Presented) The method of claim 20 wherein the comparing the  
2 audio signal to the timing signal and forming the pulse width modulated  
3 signal comprises the step of:

4 forming the reference control ramp signal to have a triangular  
5 waveform;

6 comparing the amplitude of the audio signal to the amplitude of the  
7 triangular waveform;



8           if the amplitude of the audio signal is greater than the amplitude of the  
9           timing signal, setting the pulse width modulated signal to a first  
10          logic level; and

11          if the amplitude of the audio signal is less than the amplitude of the  
12          timing signal, setting the pulse width modulated signal to a  
13          second logic level.

1   23.   (Original) The method of claim 20 wherein the up converting the pulse  
2          width modulating signal to the modulated carrier signal comprises the  
3          steps of

4          combining a carrier frequency with the pulse width modulated signal to  
5          form the modulated carrier signal.

1   24.   (Original) The method of claim 23 wherein the combining of the carrier  
2          frequency with the pulse width modulated signal is a modulating of the  
3          carrier frequency by the pulse width modulated signals, said modulating  
4          being selected from a group of modulating steps consisting of frequency  
5          shift keying modulating, amplitude shift keying modulating, phase shift  
6          keying modulating, quadrature phase shift keying modulating, time domain  
7          multiple access modulating, and code domain multiple access modulating.

1   25.   (Previously Presented) The method of claim 20 wherein the down-  
2          converting said modulated carrier signal to restore the pulse width  
3          modulated signal comprises the step of:

4 combining a receiver local oscillator frequency signal with the  
5 modulated carrier signal to restore the pulse width modulated  
6 signal.

1 26. (Original) The method of claim 23 wherein combining of local oscillator  
2 signal with the carrier frequency is a demodulating of the carrier frequency  
3 to extract the pulse width modulated signals, said demodulating being  
4 selected from a group of demodulating steps consisting of frequency shift  
5 keying demodulating, amplitude shift keying demodulating, phase shift  
6 keying demodulating, quadrature phase shift keying demodulating, time  
7 domain multiple access demodulating, and code domain multiple access  
8 demodulating.

1 27. (Original) The method of claim 20 wherein the carrier signal is at least 900  
2 MHz.